

Claims

1. Coated powder, comprising a metallic Ti-bearing core and a metallic Ni-bearing coating, characterised by a Ni:Ti atomic ratio of more than 0.5, preferably between 0.9 and 1.1, and more preferably between 0.96 and 1.04.
2. Coated powder according to claim 1, wherein the Ti-bearing core consists of metallic Ti and the Ni-bearing coating consists of metallic Ni.
3. Powder mixture comprising coated powder according to claims 1 or 2, further comprising one or both of Ni-bearing powder and Ti-bearing powder, wherein the Ni:Ti atomic ratio of the mixture is between 0.9 and 1.1, preferably between 0.99 and 1.01.
4. Coated powder or powder mixture according to any one of claims 1 to 3, characterised by a particle size finer than 150 mesh.
5. Use of a coated powder or a powder mixture according to any one of claims 1 to 4 for the manufacture of a sintered body.
6. Use of a coated powder or a powder mixture according to claim 5, characterised in that the sintered body is obtained by a self-propagating high temperature process.
7. A sintered body obtainable by a self-propagating high temperature process using powders according to any one of claims 1 to 4.
8. Process of manufacturing a coated powder according to claims 1 or 2, comprising the steps of:
  - providing for suitable quantities of a Ti-bearing powder and of a Ni salt bearing aqueous solution;
  - feeding said powder and said solution in an autoclave together with a quantity of  $\text{NH}_4\text{OH}$ , and, optionally, with a quantity of ammonium salts;
  - precipitating the Ni onto the Ti-bearing powder by hydrogen reduction;

- washing, filtering and drying the slurry obtained, thereby obtaining a Ni-coated Ti powder.

5 9. Process according to claim 8, whereby the Ni is precipitated onto the Ti-bearing powder at a temperature of at least 100 °C and a hydrogen pressure in the autoclave of at least 1.4 MPa.

10 10. Process of manufacturing a coated powder according to claim 3, comprising the steps of claim 8, and further comprising the step of intimately mixing the Ni-coated Ti powder with one or both of Ni-bearing and Ti-bearing powder.

15 11. Process of manufacturing a porous sintered body based on a Ni-Ti alloy, comprising the steps of any one of claims 8 to 10, and further comprising the step of subjecting the powder or powder mixture to a self-propagating high temperature synthesis operation.

12. A sintered body obtainable by a process according to claim 11.